

1 IN THE CIRCUIT COURT OF THE STATE OF OREGON
2 FOR THE COUNTY OF MULTNOMAH
3
4

5 THE ESTATE OF MICHELLE)
6 SCHWARZ, deceased, by and)
7 through her Personal)
8 Representative, RICHARD)
9 SCHWARZ,) Vol. 36-A
10)
11 Plaintiff,) Circuit Court
12) Case No. 0002-01376
13 vs.)
14)
15 PHILIP MORRIS INCORPORATED,)
16 a foreign corporation, and)
17 ROTHS I.G.A. FOODLINER,)
18 INCORPORATED, an Oregon)
19 corporation,)
20)
21 Defendants.)

22 TRANSCRIPT OF PROCEEDINGS

23 BE IT REMEMBERED, That the above-
24 entitled matter came on regularly for Jury Trial
25 and was heard before the Honorable Roosevelt
26 Robinson, Judge of the Circuit Court of the County
27 of Multnomah, State of Oregon, commencing at 9:00
28 a.m., Friday, March 1, 2002.

29 * * *

30 Jennifer L. Wiles, CSR, RPR.
31 710 Multnomah County Courthouse
32 1021 SW Fourth Avenue
33 Portland, Oregon 97204

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APPEARANCES:

Mr. D. Lawrence Wobbrock, Attorney at Law,
Mr. Charles S. Tauman, Attorney at Law,
Mr. Richard A. Lane, Attorney at Law,
Appearing on behalf of the Plaintiff;

Mr. James L. Dumas, Attorney at Law,
Mr. John W. Phillips, Attorney at Law,
Appearing on behalf of Defendant
Philip Morris, Incorporated and Defendant
Roths I.G.A. Foodliner, Incorporated;

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(March 1, 2002)

* * *

A.M. PROCEEDINGS

* * *

(Whereupon, the proceedings were reported, in Room 608, out of the presence of the jury, as follows:)

* * *

THE CLERK: All rise.

Court is in session.

THE COURT: Good morning. And please be seated.

Are there any matters for the Court before we bring the jury?

MR. TAUMAN: Your Honor, I don't think so because Mr. Phillips has indicated that no documents to which we have registered an objection are going to be used with Mr. Burnley today. So, we don't have -- we were going to bring something up so as to not interrupt his testimony, but since we have that representation we don't need to do that.

It may be that we will have some time, even this morning at the end of the morning, that, where it doesn't make sense to bring on a new witness to discuss that.

1 So, that's a long way of saying that we
2 don't have anything for the Court.

3 THE COURT: Very well.

4 Let's bring the jury.

5 THE CLERK: And do you need to move these
6 things so your witness can get in?

7 MR. PHILLIPS: Now that the Judge is here,
8 I will move that.

9 THE COURT: You certainly may.

10 MR. TAUMAN: There were two defense
11 exhibits, demonstrative exhibits, that were
12 marked yesterday, and we would request that
13 they be accessible to us. Apparently, they
14 have been a locked away in a cabinet. And all
15 we care about is that they be accessible to us.

16 THE COURT: Are you talking about the two
17 Accords?

18 MR. TAUMAN: Well, actually, two box tops
19 with some tobacco products and the Accord.

20 MR. PHILLIPS: They are available in the
21 courtroom any time you would like.

22 THE COURT: All right. We will make them
23 available for you, counsel.

24 MR. TAUMAN: Thank you, Your Honor.

25 THE COURT: All right.

* * *

(Whereupon, the proceedings continued,
in the presence of the jury, as follows:)

* * *

THE COURT: Good morning, members of the jury. The only information I have to share with you this morning is, in case you don't know it, today is the first day of March. Now that I have shared that good information with you, we will proceed.

Counsel, you may call your next witness.

MR. PHILLIPS: Thank you, Your Honor.

The defendant calls Mr. Harold Burnley to the stand.

THE COURT: Mr. Burnley, will you please come and take the stand?

THE CLERK: And please remain standing, and raise your right hand.

1 HAROLD BURNLEY
2 was thereupon called as a witness on
3 behalf of the defendant and, having been first duly
4 sworn, was examined and testified as follows:

5
6 THE WITNESS: I do.

7 THE CLERK: Thank you. Please be seated.

8 And for the record, will you please state
9 your full name?

10 THE WITNESS: My name is Harold George
11 Burnley, Junior.

12 THE CLERK: Spell your last name, please.

13 THE WITNESS: B-u-r-n-l-e-y.

14 THE CLERK: Thank you.

15

16 DIRECT EXAMINATION

17

18 BY MR. PHILLIPS:

19 Q Good morning, Mr. Burnley.

20 A Good morning.

21 Q Could you tell us where you live,
22 Mr. Burnley?

23 A Yes. I live in [DELETED].

24 Q And have you lived there all of your life?

25 A No. I'm actually from southwest Virginia

1 a town called Roanoke, but I lived in [DELETED]
2 for quite a few years.

3 Q And where do you work?

4 A I work for Philip Morris USA.

5 Q I'm going to ask you at the beginning of
6 your exam, because you have a low tenor to you voir,
7 to pull that microphone closer to you. If you can
8 lean in a little bit, the jury would appreciate
9 that, I know.

10 A How's that?

11 Q That's a lot better. Thank you.

12 A Okay.

13 Q Could you just take a moment and review
14 with the jury what your educational background is,
15 Mr. Burnley?

16 A Sure. I'm a chemical engineer. I went to
17 and graduated from Virginia Tech. I'm also a
18 licensed professional engineer. I did a bit of
19 graduate work in chemical engineering also at
20 Stevens Institute of Technology and then later again
21 at Virginia Tech.

22 Q And when did you graduate then from your
23 schooling?

24 A In 1967.

25 Q Okay. Where did you go to work after

1 that?

2 A My first job was with Dupont, with E.I.
3 Dupont, in a place where they made photographic
4 film. It was their photo products division. It was
5 located in Parlin, New Jersey.

6 Q What kind of things did you do for Dupont?

7 A I was a chemical engineer. Sometimes I'll
8 refer to it as being a process engineer. But my job
9 there was to try to understand the manufacturing
10 process and work on projects that improve the
11 efficiency and improve the effectiveness of their
12 process, as well as working on some product
13 improvements.

14 Q Okay. How long did you stay with Dupont?

15 A Two years.

16 Q What did you do next?

17 A Well, I got home sick and went to work for
18 what was then Allied Chemical. Now I think it is a
19 division of Honeywell. At a plant near Richmond
20 that makes yarn, that makes nylon yarn. They make
21 tire cord and carpet yarn and seat belt yarn and
22 some other specialty products.

23 And I did sort of similar things with
24 Allied. Again, I was a chemical engineer, a process
25 engineer. And I worked on improvements to their

1 manufacturing process, as well as some product
2 improvements.

3 In fact, I guess my sort of final job
4 there was as an engineering supervisor. And I had
5 responsibility for changing the way that nylon was
6 actually spun and wound to make it more cost
7 effective and increase the strength of the yarn.

8 So, I stayed there for approximately
9 four years, maybe a little more than four years.

10 Q And after that, is that started working
11 with Philip Morris?

12 A It is, yes, sir.

13 Q Okay. And, again, just sort of for
14 timeframe, you started working for Philip Morris
15 then in what year?

16 A 1973. The Fall of 1973.

17 Q And you are currently employed by Philip
18 Morris?

19 A I am.

20 Q So you have been there, what, 28 years?

21 A Correct.

22 Q Okay. Now, take a moment, if you would,
23 and just give the jury an overview of your working
24 career at Philip Morris, if you would.

25 A Okay. It might take a little while.

1 When I was at Allied Chemical, which
2 is in the same community as Philip Morris, I learned
3 through a mutual friend that Philip Morris was
4 interested in doing some work with digital computers
5 to control their manufacturing processes to make
6 them more efficient, to make the product more
7 consistent.

8 And I had always had a lot of
9 interest in industrial control, especially with
10 digital computers.

11 In fact, it was a pretty new area.
12 There were only a couple of successful commercial
13 operations. One was at an oil refinery, and one was
14 at a large paper mill in South Carolina.

15 So, I accepted a job at Philip
16 Morris. And for the first six months or so I just
17 spent that time studying how cigarettes were made,
18 and I tried to understand what was important to them
19 from a product consistency point of view, because
20 the company wanted all of their products, all of
21 their cigarettes to be a same, so cigarette to
22 cigarette within the same pack, pack to pack, carton
23 to carton, and so forth.

24 So I spent time studying the process
25 and then tried to figure out how to connect these

1 digital computers, which weren't as friendly as they
2 are today, to the manufacturing process. That is,
3 how does this computer understand what's going on?
4 And, once it does, what do you do with the
5 information? How do you tell the process how to
6 change in order to make it more of a more consistent
7 product?

8 So, I worked on that for a couple of
9 years. We were pretty successful.

10 Actually, as you probably know,
11 Philip Morris is owned by a holding company called
12 Philip Morris Companies. And Philip Morris
13 Companies owned several others, and still does,
14 several other tobacco companies in different parts
15 of the world.

16 So, I was also asked to help some of
17 the other tobacco companies, owned by the parent
18 company, to do similar things. So, I had a chance
19 to travel around the world and do this work in other
20 places.

21 As time went on, and I'm getting now
22 to about 1975, 1976, the company's business began to
23 expand, and there was a need for an engineering
24 department to, not only work on process
25 improvements, but also to build new infrastructure,

1 new factories, install new machinery, and that sort
2 of thing.

3 So, over the next several of years I
4 actually had the opportunity to build what is called
5 the Process Engineering Department at Philip Morris.

6 I was involved. I had a number of
7 jobs. I was, golly, I was Manager of Process
8 Engineering; I think Chief Process Engineer; and,
9 finally, Director of Process and Project
10 Engineering.

11 And I really had the job of building
12 new infrastructure, building new factories, and
13 working very closely with the R & D organization,
14 who was developing the new products and developing
15 the new techniques that were necessary to make our
16 products.

17 So, I was, in a sense, taking and
18 trying to translate what the R & D folks had done
19 into commercial reality, into real products, into
20 real manufacturing processes.

21 Q Can I interrupt you there for a moment,
22 sir?

23 The jury has already heard the
24 testimony about the Research & Development
25 department at Philip Morris and the scientists who

1 worked there.

2 Am I correct in understanding that
3 you are, at least at this stage of the career you
4 are talking about, a different part of the
5 organization, you were an engineer; is that right?

6 A Yes, that's correct.

7 Q And does the engineer and the process
8 engineer and the department that you helped create,
9 is that different than the work that the R & D
10 department is doing?

11 A It's different. R & D's job was to try to
12 come up with basic discovery, either to create some
13 sort of new product or to modify the product in a
14 way to reduce the risks associated with smoking.
15 And my job was to take their discovery and convert
16 it into real products that people buy and real
17 facilities that are used to make those products.

18 Q Okay. Now, I interrupted you, and you
19 were telling the jury about your career. And why
20 don't you just sort of pick up where you were. I
21 think you were talking the creation of the Process
22 Engineering Department?

23 A That's correct.

24 And I did that until, I guess,
25 roughly 1989. And then I was asked to actually join

1 the R & D department, I suppose because I had a lot
2 of familiarity with what they were doing and I knew
3 the manufacturing process pretty well.

4 But I spent then ten years in R & D,
5 with a little bit of a role change. I was designing
6 and implementing what others had developed. It was
7 now my job to do the department. So, I spent the
8 next ten years as Director of Process Development
9 and later as Vice President of Process Development
10 in R & D.

11 And then, I can't remember the date
12 exactly, but sometime in 1999 I think I was asked to
13 become Vice President of Operations Planning, which,
14 in a sense, moves farther up the food chain.

15 Instead of developing new products
16 and new processes, my job was to help the company
17 figure out what it ought to do in order to help us
18 meet on our objectives.

19 That job also has a couple of other
20 accountabilities. In addition to the more or less
21 strategic planning and helping the company try to
22 figure out what it ought to be doing, I'm
23 responsible for actual production planning and
24 scheduling, which means making sure we have got the
25 right kind of capacity in our facilities to meet the

1 consumer demand and schedule those factories as
2 well.

3 And I'm also acting as the -- I guess
4 I would call it the executive sponsor for our
5 commercial conventional sort of lit-end reduced-risk
6 products that we are working pretty hard to
7 commercialize.

8 Q And is that the SCoR program, S-C-O-R,
9 that the jury has already heard something about?

10 A It is, yes, sir.

11 Q Okay. I have got some questions for you
12 about that in a little bit.

13 But let me just ask, based on your 28
14 years of experience working for Philip Morris, do
15 you consider yourself an expert in the manufacture
16 of cigarettes at Philip Morris?

17 A Yes, sir, I do. I have designed and built
18 the lion share of the facilities there.

19 Q Mr. Burnley, I would like to start by
20 asking you some questions about tobacco leaves. Can
21 I do that?

22 A Sure.

23 Q The jury has heard about three types of
24 leaf, a burley, a bright and an Oriental leaf. Have
25 you brought some examples of those leaves to talk to

1 the jury about?

2 A Yes, sir, I have.

3 Q Okay. Why don't you pick one? And, if
4 you can, show it to the jury.

5 MR. PHILLIPS: I don't know if we can have
6 the witness stand next to this platform, Your
7 Honor, that Mr -- Dr. Whidby used. But if
8 that's all right, I think it might be easier
9 for the jury.

10 THE COURT: That's fine.

11 THE WITNESS: It would be easier.

12 THE COURT: Take the exhibit down with you
13 and show it to the jury.

14 THE WITNESS: All right.

15 I have three types of tobacco. And I
16 really will try not to make a mess.

17 MR. PHILLIPS: Okay. Mr. Burnley, I have
18 got to remind you because you are going to be
19 talking to the jury, and the court reporter is
20 behind you, so if you can angle it while
21 talking to the jury, I'm sure she would
22 appreciate that.

23 THE WITNESS: Okay. Is this okay?

24 COURT REPORTER: Yes.

25

1 THE WITNESS: Philip Morris makes what we
2 call American blended cigarettes, as opposed to
3 the English style that some of you may be
4 familiar with that are very popular in other
5 parts of the world.

6 And we use three types of tobacco. And I
7 have brought some samples with me, and I would
8 like to show you what they look like.

9 The first is called flue-cured. It goes
10 by other names. You may have heard it called
11 Virginia tobacco or you may have heard it
12 called bright tobacco.

13 But this is leaf that is grown in southern
14 Virginia. It's grown in a large portion of
15 North Carolina, eastern North Carolina and
16 central North Carolina.

17 Some of it is grown in Georgia. Actually,
18 a fair amount is grown in Georgia. Some in
19 South Carolina and a little bit in Florida.

20 This is what it looks like. I'll just
21 take one leaf out of here so I won't make too
22 much of a mess.

23 This tobacco has been cured. It has a
24 characteristic bright color, which is why it's
25 called bright tobacco.

1 This tobacco is fairly high in moisture so
2 it's nice and pliable, and it has certain
3 characteristics that our leave blenders like.
4 It is relatively high in sugars. It has a very
5 mellow taste. It is has a very pleasant aroma,
6 and it has a number of other characteristics.

7 (Reporter changed stenograph disks.)

8 THE COURT: All right.

9 You may proceed, please.

10 THE WITNESS: Okay. Thank you.

11 I just wanted to tell a little bit about
12 how this leaf is cured because it is cured
13 differently than other types of tobacco.

14 The farmer actually harvests this leaf by
15 stalk position. It ripens from the bottom of
16 the plant up. So, it's harvested from the
17 bottom of the plant up. And the different
18 stalk positions are graded differently and they
19 carry different U.S. Government grades.

20 But the curing process is done by
21 harvesting the leaves, tying them together,
22 sometimes in bands that I showed you in this
23 bag.

24 But they are cured with heat over a couple
25 periods of time. The farmer actually has

1 heated barns that are used to remove the
2 moisture and dry the tobacco so it's cured and
3 can be stored.

4 So that's a little bit about flue-cured
5 tobacco.

6 The next type I would like to talk about
7 is burley. And this is a burley leaf.

8 Burley, as you can see, tends to be a
9 little bit darker in color, and that's related
10 to the way it's cured, which I'll tell you
11 about in a second.

12 But burley tobacco is grown in extreme
13 western Virginia. Most of it is grown in
14 Kentucky, a little bit in Indiana, some in
15 Tennessee, and perhaps in a couple of other
16 bordering states.

17 The burley leaf tends to be, this is not a
18 good example, tends to be just a little bit
19 larger than the flue-cured leaf. They are
20 grown on very, very small farms. It's not
21 unusual for a burley farmer to grow less than
22 an acre. So, there are lot of burley farmers
23 out there. There are 40 or more thousands
24 burley farmers.

25 Flue-cure, on the other hand, is grown on

1 larger farms.

2 Burley is cured differently and harvested
3 differently. The whole plant is harvested at
4 one time. The whole stalk is cut, hung in a
5 barn and allowed to air cure over a period of
6 several months. So, it is cured just with
7 natural ventilation and by Mother Nature.
8 There is no heat applied.

9 So, that's a little bit about burley.

10 The final type of tobacco that we use and
11 others who make American-blended cigarettes use
12 is called Turkish. It's sometimes called
13 Oriental tobacco. Very small leaves. Very
14 labor-intensive to harvest them.

15 This tobacco is grown in the Mediterranean
16 basin. A lot of it around Turkey. Some of it
17 in other neighboring countries. Some of it is
18 even -- a little bit is actually grown in
19 Italy, but Greece and Turkey are the main
20 suppliers.

21 It's a very, very aromatic tobacco. It
22 has a very distinctive odor. And what our
23 blender's job then is to take all of these
24 tobaccos that have different attributes -- this
25 one tends to be sweet and mellow, this one

1 because of the way it's aged has very
2 distinctive characteristics, but all of its
3 natural sugars are reacted and form other
4 things during the curing process, so there are
5 virtually no sugars in it when it's -- after
6 it's cured.

7 So, one of the things that we do when we
8 process this tobacco is add back some of those
9 sugars in something called the burley casein,
10 which you may have heard about.

11 So that adds some smoothness and
12 mellowness back in the tobacco, and the
13 Oriental adds a very distinctive flavor and
14 aroma.

15 So, very briefly, those are the tobaccos
16 we use.

17 Q That's great. Thank you.

18 Now, the jury has, I think, already
19 heard some testimony about some changes in the way
20 that the bright tobacco, the lighter-colored
21 tobacco, is being cured.

22 Could you just explain briefly what
23 Philip Morris has been doing to help farmers change
24 the way they cure that tobacco?

25 A Sure. I would be glad to.

1 As you have probably heard, there are
2 substances in, actually, in both flue-cured and
3 burley tobacco that are called tobacco-specific
4 nitrosamines or TSNA's. These are substances that
5 we, in the public health community, believe are
6 health hazards.

7 R.J. Reynolds, actually --

8 MR. WOBBROCK: Your Honor, excuse me, Mr.
9 Burnley, I believe I have a matter for the
10 Court.

11 THE COURT: All right.

12 Members of the jury, just step out
13 briefly, please.

14 * * *

15 (Whereupon, the proceedings continued,
16 out of the presence of the jury, as follows:)

17 * * *

18 THE COURT: Before we get do that, I think
19 what we'll do is I think we'll move the exhibit
20 from the jury. It has a very distinctive
21 smell.

22 MR. PHILLIPS: Yeah.

23 THE COURT: And some of the jurors may not
24 be used to smelling that smell. It might be
25 better if we move it.

1 MR. PHILLIPS: Do you want me to put it
2 back in the bag?
3 THE COURT: Yes. That would probably be
4 fine, in the appropriate bag.
5 THE WITNESS: Or should I just maybe put
6 it down here?
7 MR. PHILLIPS: Yeah. Sure.
8 THE COURT: That would be fine.
9 All right. Counsel, you have a matter for
10 the Court.
11 MR. WOBBROCK: Yes. Thank you, Your
12 Honor.
13 Mr. Burnley is now beginning to repeat
14 exactly what we heard yesterday about the
15 curing process from Dr. Whidby.
16 I anticipate that he will also testify
17 about the NOD, the natural occurring
18 denitrification, and he may even go into the
19 Next project.
20 We know that from the witness list they
21 have got one or two other witnesses that are
22 going to talk about the same thing.
23 At some point, and I think we have reached
24 that point, it starts to be cumulative. They
25 start to say, with different witnesses, the

1 same thing over and over again. That is not
2 appropriate.

3 We have already heard, in great detail,
4 for an entire day and a half, from Dr. Whidby,
5 about this same subject that he is now
6 beginning to testify about.

7 And I think we should realize that we are
8 taking this jury's time with piling on the
9 evidence. One witness after another saying the
10 same thing is not appropriate and is not
11 proper. We object to this testimony, Your
12 Honor.

13 THE COURT: Counsel for the defense, your
14 response.

15 MR. PHILLIPS: Your Honor, we are in fact
16 trying to be quite sensitive to fact that Dr.
17 Whidby touched upon this.

18 There are some specific aspects of this
19 issue that I want this witness to testify to.
20 And I'm trying to not have him repeat.

21 In fact, we would have been off this
22 subject had there not been the interruption.

23 And I have also gone through his exam and
24 tried to be sensitive to what Dr. Whidby has
25 done on the NOD issue.

1 He has some specific testimony from an
2 engineering perspective that is important. In
3 a context in which there is a claim of fraud,
4 it is important to have all of the pieces.

5 They had Dr. Uydess and Dr. Farone talk
6 about this subject, and there was no complaint
7 about cumulativeness there.

8 So, we are going to finish our case faster
9 than they put their case on, Your Honor. We
10 are going to be quicker. We are going to be
11 more efficient. And there may be some slight
12 overlapping, but nothing like we heard from
13 their witnesses. So I think this is really
14 untoward.

15 THE COURT: All right.

16 I think counsel has brought it to our
17 attention, but I think I agree. He's trying to
18 deal with this witness on some issues from an
19 engineering aspect of it. Dr. Whidby was not
20 an engineer.

21 So, although, and surprisingly, Dr. Whidby
22 talked about a lot of things that he probably
23 had no expertise on, but that's neither here
24 nor there. Nobody objected. So, he was a lot
25 of information.

1 So, they are just trying to get to the
2 engineering perspective. And I think counsel
3 is aware of that and will not just try to cover
4 the same things that Dr. Whidby covered.

5 So we will try to be sensitive to that,
6 counsel. If you think we are going too far
7 afield, certainly feel free to bring it to the
8 Court's attention again.

9 MR. WOBBROCK: Counsel, if I could just
10 say for the record, counsel mentioned something
11 about the NOD process related to the fraud
12 count. And maybe I'm just not quick enough.
13 If I sit down and look at the complaint, maybe
14 I can figure that out, but that escapes me. I
15 don't know what that's got to do with fraud.

16 MR. PHILLIPS: I'll educate you about your
17 complaint at a later time, counsel.

18 MR. WOBBROCK: Thank you, Judge.

19 THE COURT: All right.

20 Bring in the jury. And let's proceed
21 again.

22 We are planning on taking our morning
23 break at 10:30. I say that to remind myself so
24 that we can change court reporters.

25 * * *

(Whereupon, the proceedings continued,
in the presence of the jury, as follows:)

* * *

THE COURT: All right.

Counsel, you may proceed with your
questions, please.

MR. PHILLIPS: Thank you.

BY MR. PHILLIPS:

Q Mr. Burnley, I was asking you about, from
the perspective of an engineer, what Philip Morris
has done to help farmers who grow this bright
tobacco and harvest it in their barns with heat, as
you have just described. Could you proceed with
your testimony, please?

A Yes. R.J. Reynolds, a few years ago,
discovered that one of the practices that the
farmers were using to cure tobacco were to actually
provide heat to their curing barns used open propane
burners. Open heat.

And there was obviously some
incomplete combustion with the propane burner and
some nitrogen oxides were formed. Those nitrogen
oxides reacted with substances in the tobacco leaf
that we called secondary alkaloids. They are
compounds similar to nicotine but not nicotine. And

1 they formed tobacco-specific nitrosamines.

2 That practice came into being during
3 the energy crisis when farmers were looking for more
4 efficient ways to heat their barns.

5 But, after that discovery, Philip
6 Morris and other members of the industry funded a
7 conversion of the barns back to flue-curing where
8 heat exchangers were used, which are very much like
9 a house furnace. It is indirect heat.

10 And Philip Morris funded that at I
11 think about \$35 million.

12 Q Has that program been successful?

13 A It has. We have reduced the TSNA content
14 in flue-cured tobacco by more than 90 percent,
15 95 percent in those cases.

16 Q Mr. Burnley, before we leave these three
17 leaves, I want to ask you a question about -- I
18 would like you assume that there's been testimony in
19 this case that some leaves are more toxic than other
20 leaves for purposes of making cigarettes.

21 In your 28 years as an engineer, and
22 as a process engineer at Philip Morris, and also
23 working in the Research & Development department,
24 have you been aware of any recommendations by public
25 health authorities to use one leaf over another

1 leaf?

2 A I'm not aware of any, no, sir.

3 Q Thank you.

4 Did you have any understanding at
5 Philip Morris while you were working on making
6 cigarettes for Philip Morris that internally at
7 Philip Morris was one leaf was considered more
8 hazardous or safer than another?

9 A No. Mr. Phillips, what you learn when you
10 begin to look at characteristics of tobacco smoke or
11 characteristics of tobacco is that there are a lot
12 of substances. There are like 5,000 substances in
13 tobacco smoke. And you can get focussed on one
14 substance.

15 And you can actually do things that,
16 in fact, will allow you to reduce the amount of that
17 substance, only to learn later that what you have
18 done has had unintended consequences of increasing
19 the concentration of something else.

20 So, while the chemistry of these
21 leaves differ, you really have to look at it
22 holistically. You have to look at how these
23 substances work together. You have to look at the
24 overall weight of the evidence, the overall weight
25 of the chemistry and the biological testing that's

1 done.

2 You can draw some wrong conclusions.
3 And I will tell you I have drawn some wrong
4 conclusions by targeting some specific compound and
5 not understanding what removal of that does or
6 substitution of one tobacco for another does on
7 something else.

8 Q I would like to take a moment, if I can,
9 and, again from your perspective as an engineer,
10 could you just describe the process that Philip
11 Morris goes through when it wants to make a new
12 product, a new cigarette that it wants to put on the
13 market?

14 A Sure. I'll try to. It might take me a
15 couple of minutes.

16 Generally, what happens is the
17 marketing department determines what the needs are.
18 And R & D will get what we call a brief from
19 marketing. And we won't have a lot of information
20 on it, but it will have information that contains
21 generally these things.

22 As you have probably heard previous
23 testimony, that the U.S. market tends to be
24 segmented in tar categories as measured by the FTC
25 method.

1 Those tar categories are really just
2 different flavor perceptions or strength perceptions
3 of the cigarette. Different people enjoy different
4 strength cigarettes.

5 So, one of the things that marketing
6 will do is say, hey, create a cigarette for me that
7 is a full-flavor cigarette that delivers -- I'm just
8 making this up for purposes of illustration now --
9 that delivers 15 milligrams of tar and it has this
10 taste profile. It tastes like -- or it's somewhere
11 between Marlboro and, I don't know, Camel. I'm just
12 making this up.

13 And it's usually not a lot more, at
14 that point, it is not a lot more detailed than that.

15 So, the first step then is for our
16 leaf blenders, who are really very, very skilled in
17 how these leaves taste and how they work with one
18 another --

19 You know, it's not a lot different
20 than blending wine or making wine at this point.

21 These people are real experts on how
22 these tobaccos work together. They are experts on
23 the burley, Oriental, flue-cured, the different
24 grades of those tobaccos, and also on our
25 reconstituted tobaccos.

1 So, they'll put together a blend.

2 And they will hand-make cigarettes. They'll cut the
3 tobacco by hand, roll it in paper and smoke it to
4 see if they believe that that product is
5 subjectively similar to what they believe marketing
6 has asked for. That's the first step.

7 They pay some attention at this point
8 to tar delivery because they, if it's a low-tar
9 cigarette, for example, they are going to want to
10 avoid some types of tobaccos that generally deliver
11 a lot of tar for a specific weight.

12 For example, Oriental is very
13 flavorful but, if you use a lot of it, you will have
14 a high-tar cigarette because it just generates a
15 disproportionate amount of tar for the volume that
16 occupy the cigarette.

17 So, anyway, to make a long story
18 short, they'll get close. They'll smoke these
19 cigarettes and be fairly comfortable that it meets
20 the taste profile.

21 The next thing that happens is the
22 cigarette designers then work with that blend. And
23 their job is to be more precisely control the tar
24 delivery for that product.

25 So, they'll take the blend and

1 they'll select the cigarette paper, filter material,
2 type of degree of filtration that the cigarette
3 needs to have and the amount of ventilation.

4 And then they'll machine make
5 cigarettes so that they meet the -- now the tar
6 specification.

7 And then you get some interaction
8 back with the leaf blenders because now you have
9 machine-made cigarettes that have the right
10 resistance to draw, that have the right tar
11 delivery, and they'll smoke them again, and they may
12 make some changes.

13 So, this is an interactive procedure
14 between leaf blenders and cigarette designers.

15 When they are happy, at that point --
16 and you have to remember that most all of the flavor
17 in a cigarette comes from the tobacco. Flavors we
18 apply, we call them signatures. They give a little
19 bit more balance. They give some distinctiveness to
20 the cigarette. But you can't take a bad blend and
21 make a good cigarette by adding flavor.

22 So, the final thing that the
23 flavorist does then is try to provide the right kind
24 of balance to the cigarette and create the final
25 product.

1 And again you might get some
2 interaction between the three groups.

3 But, at that point, the design
4 process is complete, and we begin evaluating the
5 cigarette by various, by various panels. They are
6 expert panels.

7 We have one, actually, the next step
8 is one where a panel of experts that we call a
9 qualitative descriptive panel. It's a group of
10 experts, maybe six or seven, that smoke a cigarette
11 and answer very specific questions about it. And
12 those questions are about specific taste
13 characteristics. Things like, I don't know,
14 sweetness, aftertaste and so on and so forth. And
15 it will create what we call a sensory profile or a
16 taste profile for that product.

17 If they believe it's a balanced
18 product and it tends to meet with what marketing's
19 expectations are, we actually do consumer testing.
20 And we ask the consumers to smoke the cigarette.

21 And usually, not always, but usually
22 we ask three questions. One is, on a scale of one
23 to seven, how strong is this cigarette? On a scale
24 of one to seven, how much do you like it? And on a
25 scale of one to seven, how close is it to the

1 product that you are smoking?

2 So then we take the weight of all of
3 the qualitative descriptive expert panels and the
4 what we call consumer panels, or POL panels, if you
5 have heard that term, take all of that stuff back to
6 marketing, and the make a final decision on whether
7 or not to market the product. Then they work on
8 packaging and that sort of thing.

9 Generally speaking, that's how it is
10 done.

11 Q Now, I want you to assume that there's
12 been testimony in this case that Philip Morris
13 actually designs its cigarettes to meet specific
14 nicotine levels. How do you respond to that, sir?

15 A Well, as I said a second ago, our market
16 is segmented by strength points or tar points. We
17 design for a certain FTC tar delivery. That's not
18 to say we can't predict what the nicotine content is
19 because, you know, for all of the cigarettes really
20 in the U.S. marketplace, if you know the tar level
21 you can pretty accurately predict the nicotine
22 level. But we design for tar because that's what
23 correlates most closely to strength and the likely
24 perception of the product by the consumer.

25 Q Now, have you prepared a chart that you

1 would like to show the jury which shows the
2 relationship between tar and nicotine in the United
3 States market?

4 A Yes, I have.

5 Q Okay. This will be marked Exhibit 1494,
6 Defense Exhibit 1494.

7 MR. PHILLIPS: I don't know if we can make
8 that any larger, Mr. Walsh.

9 THE WITNESS: Well, could I stand up?

10 MR. PHILLIPS: If that's all right with
11 Your Honor.

12 THE COURT: You may.

13 THE WITNESS: And I'll try to speak up.

14 These points on this chart represent tar
15 and nicotine values as reported by the FTC.

16 They are done in a laboratory called a
17 TITL laboratory, Tobacco Institute Testing
18 Laboratory.

19 So, these would represent tar and nicotine
20 numbers as would be to support the advertising
21 on our packs or on our advertisements.

22 This scale on the bottom shows tar
23 delivery. And it goes from zero -- there
24 aren't any zero tar delivery products -- on up,
25 to some fairly high-delivery products.

1 And these are the nicotine deliveries
2 associated with each one of the tar deliveries.

3 So, what you would do is, if you wanted to
4 position one of the products on this chart, you
5 would go along this access, find what its tar
6 is, find what its nicotine level is, and plot
7 that point.

8 And this chart simply shows the
9 relationship between tar and nicotine of really
10 all of the products that were sold in the
11 United States.

12 This data is a little bit old. It is 1993
13 data.

14 The red dots indicate Philip Morris
15 products, and the blue triangles are computers
16 products.

17 BY MR. PHILLIPS:

18 Q Could you sort of point out, at least
19 roughly, where on the chart Merit cigarettes would
20 fall? They are the cigarette that Michelle Schwarz
21 smoked?

22 A Yes. Actually, I looked at this data set.
23 And the Merit delivered, I think, 7.7 milligrams of
24 tar and .62 milligrams of nicotine. So, I believe
25 it is this point right here.

1 Q Thank you.

2 You can sit down, if you would like,
3 sir. Thank you.

4 Mr. Burnley, I also want you to
5 assume that the jury has heard testimony in this
6 case that cigarettes, no matter what the tar and
7 nicotine delivery, as reported by the FTC, have the
8 same amount of tobacco and the same amount of
9 nicotine in them in the rod.

10 Do you have a response to --

11 MR. WOBBROCK: Your Honor, I don't believe
12 that's been the testimony. I think if counsel
13 wants to characterize testimony, that's
14 improper. That has not been the testimony.
15 It's for the jury to recall what the testimony
16 is.

17 MR. PHILLIPS: I framed it terms of a
18 hypothetical. I think it's a perfectly
19 permissible question, Your Honor.

20 THE COURT: All right.

21 Let's proceed, please.

22 BY MR. PHILLIPS:

23 Q I want you to assume that there's been
24 testimony that each cigarette, no matter which one
25 there is, on this chart, has the same amount of

1 nicotine, the actual amount of nicotine in the rod
2 that's available to be consume. Is that right, sir?

3 A No, sir, that's not correct.

4 Q Okay. And have you prepared a chart that
5 you would like to show the jury that sort of
6 explains that?

7 A I have, yes.

8 Q Okay. Is this that chart, sir?

9 A It is. And, again, it would be helpful if
10 I could stand.

11 THE COURT: Feel free to move and step to
12 the board when you need.

13 MR. PHILLIPS: Thank you, Your Honor.

14 This one is going to be marked Defense
15 Exhibit 1495.

16 BY MR. PHILLIPS:

17 Q Perhaps, if you could, just take a moment
18 and explain what we are looking at here.

19 A Yes. I just wanted to show three
20 different products because they represent three tar
21 deliveries or three tar points.

22 Marlboro. Marlboro is a 15-milligram
23 tar product or this particular Marlboro is.

24 Merit, which is an 8-milligram tar
25 product.

1 And Merit Ultima, which is a 1
2 milligram tar product.

3 And the actual amount of tobacco, the
4 weight of tobacco in these cigarettes are shown on
5 the far right. Actually, it is the total weight of
6 tobacco, plus the moisture, or plus the water.
7 There's actually less tobacco than that.

8 But Marlboro has 740 milligrams,
9 about three quarters of a gram of tobacco.

10 Merit, being a lower-tar product, has
11 680 milligrams of tar, on average.

12 And Merit Ultima has just under 500,
13 490 milligrams of tar.

14 Q You're saying tar. Do you mean tobacco?

15 A Tobacco. Excuse me.

16 Q That's all right.

17 A The nicotine, the percentage of nicotine
18 in the tobacco for Marlboro, for this test -- and I
19 have got to tell you it varies a little bit. This
20 is an agricultural product, and there's some
21 variation in it.

22 But for this particular set of data
23 the alkaloid or the nicotine concentration
24 percentage in the tobacco for Marlboro I think was
25 2.04 percent.

1 For Merit it was essentially the
2 same. It was like 1.98 percent.

3 And for Merit Ultima it was a little
4 higher. I think it was 2.4 percent.

5 So, to get actual quantity of
6 nicotine, you have to multiply the percentage of
7 nicotine in the tobacco by the total weight to get
8 the milligrams of nicotine.

9 And I'm not sure I can remember the
10 numbers, but this should be like around 14. 14 and
11 a half milligrams of nicotine.

12 This would be a little less, around
13 13 and a half.

14 And this would be less, around I
15 think I calculated 12.3 or something like that.

16 So, there is less tobacco, and there
17 is less actual nicotine in the tobacco.

18 Q And with respect to the Merit cigarettes,
19 which Mrs. Schwarz smoked, is the total amount of
20 nicotine in the rod that's available to be consumed
21 less than the Marlboro cigarette?

22 A Yes, sir, it is.

23 Q And would that be true also of a
24 comparable Benson & Hedges brand?

25 A Yes.

1 Q Okay. And is the percentage of nicotine,
2 as a percentage of the actual tobacco in the
3 cigarette, in Merit, the same, less or more than
4 what you would find in Benson & Hedges or Marlboro?

5 A It is approximately the same.

6 Q And in this particular example it was a
7 little lower?

8 A It was a little lower.

9 Q Okay. Now, Mr. Burnley, the jury has seen
10 a videotape in this case of a manufacturing plant,
11 the Philip Morris manufacturing plant. Have you
12 looked at that videotape for purposes of your
13 testimony today?

14 A Yes, I did.

15 Q Okay. Dr. Farone actually testified about
16 that to the jury. Do you know Dr. Farone?

17 A I do.

18 Q Did you work with him while he was at
19 Philip Morris?

20 A Yes, I did.

21 Q Okay. Now, the videotape showed a lot of
22 different pipes and different names on different
23 pipes. I would like to go through those with you,
24 briefly, if I can, just have you explain to the jury
25 what those pipes mean.

1 And I believe this was, you tell me
2 if I'm right, when you looked at the videotape, was
3 it apparent to you that it was a RL, or
4 reconstituted leaf manufacturing facility?

5 A There is actually footage in that
6 videotape from our RL plant and our BL plant, both
7 of those are reconstituted tobacco facilities, but
8 they are different facilities and they make a
9 different product.

10 Q Okay. Let's start with glycerin. There
11 was a pipe that showed glycerin. Can you tell us
12 what that is or what it does?

13 A Yeah, sure. Glycerin is a humectant.
14 It's a substance that's used to help tobacco retain
15 its moisture, for two reasons.

16 One is, and I have got another little
17 example that I would like to show you, but tobacco
18 is a very friable material. If you try to process
19 it, and it is not moist and it does not contain
20 humectants, it will destroy it. You won't be able
21 to make cigarettes out of it.

22 I have an example.

23 Q There's a garbage can right over there, if
24 you want to use that.

25 A This is a piece of burley tobacco. It is

1 identical to what I showed you earlier. I just
2 pulled it out of the plastic bag last night just to
3 show you how fast it dries out.

4 And if you were to try to remove the
5 stem from this tobacco or cut it or flavor it or
6 blend it, you would just end up with dust because it
7 is very, very, very friable and very fragile.

8 So, humectants are added to help
9 prevent the loss of moisture so that you can process
10 this tobacco. And it also adds a freshness
11 sensation to the cigarette because, if you happen to
12 be a smoker or if you ever smoked a cigarette, and
13 they become dried out, left out in the sun or
14 something like that, they become extremely harsh,
15 unpleasant. And that's why we add humectants.

16 Q What about something called propylene
17 glycol? That was another substance we saw. Can you
18 tell us about that?

19 A It is used for exactly the same purpose.
20 It is another humectant.

21 Q The jury may have heard something about
22 antifreeze. Now, is propylene glycol used in
23 antifreeze, sir?

24 A I believe ethylene glycol is used in
25 antifreeze, not propylene glycol.

1 Q You have already talked a little bit about
2 flavors, but there were things called flavors, and
3 Isosweet are various types of flavors that were
4 shown on the videotape. What about those?

5 A That's correct. There are flavors used to
6 help the balance of the product, to make it smoke
7 more, smoke more pleasant.

8 Q Okay. And there was another substance we
9 saw called propyl parabens? Tell us about that.

10 A Yeah. Propyl paraben is a biocide.

11 Q Could you stop and spell that for the
12 court reporter, biocide?

13 A B-i-o-c-i-d-e, I think.

14 Q Okay.

15 A It is -- they are substances used to
16 prevent spoilage. You know, if you look at food
17 ingredients and that sort of thing, you'll see
18 propyl paraben and other preservatives that are
19 added. It is simply there. There's sugar in our
20 product. We try to pack it at a moisture that makes
21 it enjoyable to smoke. So, they are there to
22 prevent mold growth and that sort of thing.

23 Q Now, we also saw a couple of pipes
24 relating to urea. And I think there was also a
25 reference to DAP, or diammonium phosphate.

1 Why does Philip Morris use those
2 chemicals?

3 A Well, urea, urea was used in our RL
4 process as a flavorant and diammonium phosphate, as
5 well. Diammonium phosphate is also used to make BL.
6 It is one of the things that are necessary that
7 enable us to make that product to hold the tobacco
8 together so we can reconstitute tobacco with a BL
9 process.

10 Q And I want you to assume that there has
11 been testimony in this case that Philip Morris uses
12 ammonia and urea to make its reconstituted tobacco
13 more addictive.

14 Do you have any response to that
15 position articulated in this case?

16 A Yeah. I can tell you absolutely that's
17 not why Philip Morris uses --

18 MR. WOBBROCK: Excuse me, Your Honor. I'm
19 going to object to --

20 THE WITNESS: -- diammonium phosphate.

21 THE COURT: Go ahead, with your
22 objections, counsel.

23 MR. WOBBROCK: This witness is not
24 competent to testify about these subjects, Your
25 Honor. This is way beyond the scope of his

1 expertise as an expert engineer.

2 MR. PHILLIPS: Your Honor, if I may be
3 heard briefly.

4 MR. WOBBROCK: Well, if we are going to do
5 that, let's do it outside the presence of the
6 jury.

7 MR. PHILLIPS: If you get to talk in front
8 of the jury, I do, too.

9 THE COURT: Well, let's let the jury go
10 out, and you guys can talk to me.

11 All right. Members of the jury, you may
12 go into the jury room.

13 * * *

14 (Whereupon, the proceedings continued,
15 out of the presence of the jury, as follows:)

16 * * *

17 MR. PHILLIPS: Your Honor, I mean, I guess
18 counsel can try to interrupt as much as he
19 wants, rather than saving whatever he wants for
20 cross-examination, but, in fact, ammonia --
21 this witness is going to testify that ammonia
22 was used for purposes of an engineering need
23 with respect to its reconstituted tobacco.

24 He is, in fact, the one who is most
25 conversant with why it was used in the

1 engineering process. And he is the best
2 witness to testify to those issues.

3 As to whether ammonia does or does not
4 enhance addictiveness, which is another
5 position with respect to the plaintiff, he is
6 not going to testify on that subject.

7 What he is going to testify is why it was
8 used and for what purpose it was used and
9 whether he's ever heard whether it was used or
10 could be used for the purposes of and alleged
11 in this complaint.

12 He's certainly entitled to do all of those
13 things.

14 MR. WOBBROCK: Well, he just asked him,
15 Your Honor, if he thought it was added to make
16 the product more addictive. That's what I
17 heard.

18 MR. PHILLIPS: Well, you didn't hear it
19 correctly because the question was: Have you
20 ever heard, while you were working at Philip
21 Morris, that these substances were used to make
22 the product more addictive?

23 I'm beginning to think that counsel feels
24 it is more important to interrupt a direct
25 examination than to save his points for

1 cross-examination, Your Honor.

2 THE COURT: Can we go back --

3 MR. PHILLIPS: I'll be happy to frame it
4 that way.

5 THE COURT: I'm trying to get back to the
6 question that was asked. Since you have
7 realtime reporting, let's take a look at it.

8 MR. PHILLIPS: Let's see if I'm a bad
9 rememberer or a good rememberer. In any event,
10 I would be happy to frame it that way.

11 THE COURT: It says, Mr. Phillips, well,
12 your question was: "Have you ever heard, while
13 you were at Philip Morris, that these
14 substances were used to make the product more
15 addictive?"

16 MR. WOBBROCK: I think that's the question
17 just repeated, Your Honor.

18 MR. PHILLIPS: That's precisely the
19 question I told you I asked. And it is
20 different than the one you told the Court I
21 asked.

22 MR. WOBBROCK: Let me just ask a question
23 in aid of objection so we don't have to go over
24 this again.

25 BY MR. WOBBROCK:

1 Q Mr. Burnley, the area of nicotine and its
2 effect upon the physiology of the body, that's way
3 outside of your area of expertise, is it not, sir?

4 A It is.

5 MR. WOBBROCK: All right.

6 MR. PHILLIPS: All right.

7 THE COURT: So, counsel, you are going to
8 rephrase -- reframe your question.

9 MR. PHILLIPS: I think the question is
10 appropriate, Your Honor.

11 Have you ever heard, while you were
12 working at Philip Morris?

13 And the answer will be no, and we'll move
14 along.

15 I'm not going to ask him whether or not
16 he's a scientist who has examined the question
17 of whether ammonia does or does not make it
18 more addictive. That's something others will
19 talk about, before and afterwards.

20 But this is the engineer, Your Honor, who
21 actually was aware of how it was used in the
22 process and why it was put into the process,
23 and that's what we need to get before the jury.

24 MR. WOBBROCK: What he has heard outside
25 of his area of expertise is really pretty

1 irrelevant. I mean, he may have heard a lot of
2 things, he may have heard that the president of
3 the company had a zillion dollars. So what?
4 He's not in the finance department. He's not
5 in the medical department. And whether or not
6 he's heard any of this stuff I think is
7 irrelevant.

8 MR. PHILLIPS: Save it for
9 cross-examination, counsel. Come on. Let's
10 get --

11 THE COURT: I think what we will do,
12 counsel, I think I will sustain his objection
13 to what he has heard, and we will allow his
14 testimony as to, as a chemical engineer, why
15 that product was put into the product.

16 MR. PHILLIPS: Okay.

17 THE COURT: We get right to what he's
18 dealing with, not the gossip that goes around
19 the plant.

20 All right. Bring the jury, please.

21 I think the jury considered this to be a
22 regular break.

23 MR. PHILLIPS: It may be.

24 * * *

25 (Whereupon, the proceedings continued, in

1 the presence of the jury, as follows:)

2 * * *

3 THE COURT: And, members of the jury, we
4 will be taking our regular break at 10:30.

5 All right. Counsel, please proceed.

6 MR. PHILLIPS: Thank you, Your Honor.

7 BY MR. PHILLIPS:

8 Q Mr. Burnley, could you tell the jury why
9 Philip Morris uses ammonia in its reconstituted leaf
10 manufacturing process?

11 A Sure. It will take a little time to do
12 it.

13 Q By the way, did you prepare a graphic to
14 be able to explain that to the jury?

15 A Yes. That will be more helpful, I think.

16 Q Is that the graphic?

17 A Yes. And I think I'll stand up again.

18 THE COURT: You may.

19 MR. PHILLIPS: Just for the record, this
20 will be Defense Exhibit 1496.

21 Sorry, Mr. Burnley. Go ahead.

22 THE WITNESS: I really need to start with
23 the beginning so you can understand what I'm
24 talking about.

25 But I showed you this leaf before. And

1 this leaf has some stem in it. This piece
2 right here is called the mid-rib.

3 If we were to chop this leaf up and put it
4 into our cigarettes, this rib would be a
5 problem because it would poke holes in the
6 cigarette paper. It would burn at a different
7 rate than this lighter tobacco. And it would
8 have a different taste.

9 So, the first thing that Philip Morris, or
10 any tobacco company, does is remove this
11 portion of the leaf from the stem. And it
12 comes apart pretty easily.

13 Of course, it's done, this is done
14 mechanically in a process called the stemmery
15 or in stemming.

16 And the stem, however, though is saved.
17 And you'll also see that there are little small
18 pieces of tobacco that are still on the stem
19 that are not easily recovered.

20 And I also showed you awhile ago that when
21 they dry out they become very, very fragile.

22 So, since this is all perfectly good
23 tobacco, and, to be perfectly honest with you,
24 we paid the same amount of money for the stem
25 as we do for the leaf, it is worth a couple of

1 dollars a pound, the company has developed two
2 ways to reconstitute this stem or to reuse it
3 since it is perfectly good tobacco.

4 And the first process I'm going to
5 describe to you, and I apologize for the poor
6 diagram, but I'll try to make it easy, shows
7 how this stem is converted back into useful
8 tobacco that looks a lot like this.

9 Here's what we do. I have a couple of
10 other samples.

11 Starting --

12 Q I'll put this back here for you.

13 A Thank you.

14 Q Sure.

15 A The starting material for this plant or
16 this process, the stem comes from the stemmery. The
17 stem, just like I created when I hand-stemmed that
18 tobacco, but it is ground to a very, very fine
19 powder, sort of like, I don't know, sort of like
20 flour or talcum powder, very, very fine.

21 There's also some other fine pieces
22 of tobacco that, because it is so fragile, fall off
23 in the processed tobacco. And those are collected
24 and they are saved. And they are also ground to a
25 very, very fine consistency, as well.

1 So, this picture just shows the
2 starting material. The tobacco starting materials
3 are stem and little tiny pieces of tobacco. They
4 are ground into a fine powder.

5 We learned sometime ago that tobacco
6 stem contains a substance called pectin. It is
7 exactly the same substance that you might use to
8 thicken jellies and jams, and it is generally a
9 thickener that you are probably familiar with.

10 Unfortunately, the form that the
11 pectin is in, it is in a form called calcium
12 pectate. It is a pectin salt. And whenever you
13 see, not always, but whenever you see calcium salts,
14 they are very often insoluble in water. They don't
15 dissolve in water.

16 The inventor of this process thought
17 that if he could release that pectin, that calcium
18 pectate, from the tobacco, and get it into water or
19 get it into solution, he would have a natural glue
20 that would hold the tobacco pieces together. And
21 that's what this process is about.

22 He learned that, by adding DAP, which
23 is diammonium phosphate, that he could convert the
24 pectin from calcium pectate to ammonium pectate,
25 which is very water soluble.

1 He also learned that sometimes the
2 reaction would work and sometimes it wouldn't. And
3 he found out that the reason for that is that this
4 reaction be only took place at a certain pH.

5 So a small amount of ammonium
6 hydroxide is added also to this solution that I'm
7 building for you now in order to adjust the pH of
8 the solution so that the calcium pectate will be
9 converted to ammonium pectate.

10 We also add water and some flavors
11 and the same humectants that I described to you a
12 little while ago, glycerine and propylene glycol.

13 So, the next thing that happens is
14 this solution that's prepared with these substances
15 is mixed with the tobacco and it's agitated in a
16 very large tank.

17 This reaction doesn't take place
18 immediately. It takes time. So, the tank is large.
19 This mixture is held for a while.

20 And what happens is all of that, not
21 all, but some of that calcium pectate now is soluble
22 in water because it has become ammonium.

23 After the proper amount of aging, so
24 we get as much of that conversion as possible, this
25 slurry, and it is hard to describe what it looks

1 like, but if you are familiar with apple butter, it
2 is sort of like the color and consistency of apple
3 butter.

4 And what we do is spread a thin layer
5 of this slurry on a moving stainless steel band. It
6 is like a -- it is sort of like a giant cookie
7 sheet, that goes through a dryer, that looks like a
8 very big pizza oven. So, this stainless steel band
9 containing the wet slurry goes through the dryer.

10 And a couple of things happen.

11 One is, it is dried so you are able
12 to peel off the tobacco sheet from the other end.

13 But also what makes it very useful is
14 that the reaction that I talked about before, where,
15 and I apologize for the chemistry, but the calcium
16 pectate was changed to ammonium pectate because we
17 wanted it to become soluble, but in a cigarette
18 factory we are actually working with blending and
19 flavoring this material you want the sheet to hold
20 together.

21 So what happens in the dryer is, the
22 ammonium is very volatile, it is a gas, and it is
23 released or it is driven off a sheet.

24 And the ammonium pectate goes back to
25 calcium pectate. So now it is insoluble, and it is

1 strong.

2 So now you have a sheet that is
3 peeled off of the belt. It is cut into pieces that
4 look like tobacco chunks. And it is blended in with
5 our other tobaccos in our cigarette factories.

6 So, that is why ammonium hydroxide
7 and diammonium phosphate are used in this process.
8 And, frankly, it is the only reason it is used in
9 this process.

10 Q Now, did Philip Morris obtain patents with
11 respect to the use of diammonium phosphate in this
12 reconstituted tobacco manufacturing process?

13 A Yes, sir.

14 Q Okay. This is Defense Exhibit 777. It's
15 a 1967 patent. Is this the patent that describes
16 the use of ammonium phosphate in the process that
17 you just described?

18 A I can't read it.

19 Q Maybe we can pull up the abstract so it
20 can be readable.

21 A Yes, sir. That's it.

22 Q Okay.

23 MR. TAUMAN: Is there an exhibit number
24 for this?

25 MR. PHILLIPS: 777.

1 MR. TAUMAN: Thank you.

2 BY MR. PHILLIPS:

3 Q Is this the other patent that refers the
4 use of ammonium in the process of making blended
5 leaf?

6 A Yes, sir, it is.

7 Q Okay. That's a 1967 patent?

8 A That's correct.

9 Q That's Exhibit 799. All right.

10 Now, there's another reconstituted
11 tobacco that you manufacture other than blended
12 leaf; right?

13 A That's correct.

14 Q And that's called?

15 A It is called RL. It stands for
16 reconstituted leaf.

17 Q And diammonium phosphate is used in that
18 process, as well?

19 A It is.

20 Q Could you explain how that works?

21 A Sure. Maybe I'll go into a little less
22 detail. But in the early 70's, probably 1970, as
23 the company's business grew, we needed more
24 reconstituted tobacco capacity. And there was a new
25 process available invented by a paper company called

1 Switzer. And the company decided to use that new
2 technology.

3 And it is similar in some ways and it
4 is different in some ways. The starting materials
5 are exactly the same. It is tobacco stem and small
6 pieces of -- small pieces of tobacco.

7 But instead of grinding this material
8 and making a slurry and cast it on a belt, we use a
9 paper-making process where the stem is put in a
10 large tank with hot water. And we try to remove as
11 many of the water-soluble portions of tobacco from
12 the cellulose. That's the solid part that's left.
13 Exactly what paper companies do when they make a
14 sheet of paper.

15 But, to make a long story short, we
16 make a sheet of paper with fiber. Then we recover
17 the solubles because that's where the flavor is. If
18 we did not do that, it wouldn't be a usable product.
19 It would probably be like smoking a grocery bag or
20 something.

21 However, this product tastes
22 different when this material is blended into the
23 cigarette.

24 And I mentioned to you earlier that
25 one of the main themes that Philip Morris'

1 manufacturing has been over the years is to really
2 try to make a product consistent so the consumer
3 knows exactly what to expect.

4 When we started using RL, we found
5 that it did change the taste of the cigarette quite
6 a bit. So the flavor chemists were asked to try to
7 come up a flavor that would make this RL product
8 very similar in taste to BL so it could be
9 substituted and the consumer would find it
10 acceptable.

11 So, not surprisingly, I guess, not a
12 lot of rocket science, they went back with the same
13 additives that were used in BL to see if they would
14 impart the same taste. And they found that using
15 diammonium phosphate and some urea at the time that
16 the taste of these two products became much more
17 close together, not exactly, but close enough so
18 that, as used in the cigarette, the consume are
19 wouldn't object to it.

20 So, that's why these ammonia
21 compounds are used in RL. It was simply to make it
22 taste as much like BL as we could.

23 So, I guess, just to sort of
24 summarize, there are two reasons. One, we use
25 ammonia compounds to physically let us make a BL

1 sheet; and, second, as a flavorant to make RL smoke
2 as much like BL as possible.

3 Q Now, is ammonia something you actually
4 find in the tobacco leaf or is this something that
5 is extraneous to it?

6 A Yes. There's quite a bit of ammonia in
7 naturally-occurring tobacco.

8 Q Was that one of the benefits of using
9 ammonia to help with the blended-leaf process?

10 A Well, I think so. I mean, it is sort of
11 tobacco-identical people. You weren't introducing a
12 foreign flavor or a substance that you would later
13 have to compensate for by other blending or other
14 flavor systems. So, it turned out to just be a very
15 pleasant-smoking product and one that our consumers
16 enjoyed. And, yes, probably because it is
17 naturally-occurring tobacco.

18 Q In either of these reconstituted leaf
19 manufacturing processes, is any nicotine that's not
20 already in the tobacco leaf added to the tobacco?

21 A No. In fact, in fact, some is lost.

22 Q And before we leave this subject, on the
23 subject of urea, I want you to assume that there's
24 been some testimony that maybe the source of that,
25 to put it delicately, is either from animal or human

1 waste. Is that correct, sir?

2 A No. Urea is synthesized from ammonia and
3 carbon dioxide.

4 Q Is it a synthetic chemical then?

5 A It is. I mean, it may be naturally
6 occurring in small quantities in nature, but it is
7 synthesized from ammonia and CO₂.

8 MR. PHILLIPS: All right.

9 I would like to move to another subject to
10 see if we can get through it before the morning
11 break, Your Honor.

12

13 BY MR. PHILLIPS:

14 Q The jury has already heard some testimony

15 --

16 THE COURT: We may go a little before --

17 MR. PHILLIPS: Excuse me, Your Honor.

18 THE COURT: -- 10:30, a little longer, if
19 not a lot, because the other court reporter is
20 having computer problems, also.

21 MR. PHILLIPS: Very well, Your Honor.

22 THE COURT: So, proceed.

23 MR. PHILLIPS: You let me know then when
24 you want to break.

25 THE COURT: All right.

1 BY MR. PHILLIPS:

2 Q The jury has already heard some testimony
3 in this case regarding a project called NOD,
4 naturally-occurring denitrification.

5 Did you have any role in that
6 process, as a process engineer, sir?

7 A Actually, I did. At the time, I was
8 running the Process Engineering Department or
9 Project and Process Engineering Department. And, as
10 I mentioned earlier, my job was to translate what R
11 & D had done into commercial manufacturing
12 processes.

13 So, yeah, I followed that project for
14 many years, and I was responsible for or it would
15 have been my job to scale it up and do the
16 commercial installation.

17 Q It was your job to actually commercialize
18 this system out of the R & D department?

19 A Yes, sir, it was.

20 Q And were you able to commercialize it,
21 sir?

22 A We had our -- the short answer is no. We
23 had -- we had our share of problems with NOD. It
24 was, frankly a very, very clever idea. And it
25 showed -- there was a lot of excitement around it.

1 In the early days, it showed lot of
2 promise. The idea was to take naturally-occurring
3 organisms, soil organisms, and, under the right
4 conditions, we thought that those microorganisms
5 could be controlled in a way that would react with,
6 consume, eat, whatever terminology you want to use,
7 potassium nitrate that is in tobacco, is in tobacco
8 stems as a result of fertilizers.

9 After several years, we were just
10 unable to solve all of the problems.

11 In fact, we were building, expanding
12 our reconstituted leaf plant.

13 We had another process that was used
14 to denitrate RL. It was a physical process. It
15 was, we called it crystallization. But we wanted,
16 we thought there was an opportunity to totally
17 denitrate the product. Crystallization is not
18 100 percent effective. So, our intent was to
19 install this NOD process as an alternative to
20 crystallization.

21 The time came. We had to make a
22 decision. And we just had unsolvable problems. The
23 process wasn't reliable. It would start sometimes.
24 Other times it wouldn't. And, you know, if you are
25 designing and operating a commercial factory, you

1 have got to be able to rely on start-ups. So when
2 you shut down for cleaning or shut down for
3 maintenance, you have got to be able to start back
4 up and start it back up in a reliable way.

5 Sometimes we could start it up. And
6 sometimes we couldn't. Sometimes the reaction would
7 just stop in mid-stream.

8 This reaction worked by converting
9 potassium nitrate to a nitrite salt and then into
10 nitrogen gas. And sometimes it would stop and just
11 stop at a point where nitrate was converted to
12 nitrite. We didn't know why. But we also believe
13 that nitrite was more hazardous than nitrite, and
14 that was unacceptable.

15 And sometimes, I guess, because of
16 varying nutrients in the feed materials, the tobacco
17 materials, other reactions would take place where we
18 would generate organic acids, butyric acid and
19 others that smelled like rancid butter and week-old
20 gym socks. I mean, it was just very obnoxious.

21 MR. WOBBROCK: Your Honor, we are going
22 over the same thing we did yesterday. I
23 object. It's cumulative.

24 THE COURT: All right.

25 As long as he moves right along --

1 MR. PHILLIPS: We are about going to
2 complete this.

3 THE COURT: Proceed, counsel.

4 BY MR. PHILLIPS:

5 Q Let me ask you this. Were you the
6 engineer who had to make the recommendation about
7 whether the company should have commercialized this
8 project?

9 A I am, yes.

10 Q And from your own perspective, is this a
11 project that you wanted to succeed?

12 A Absolutely. I mean, we had spent millions
13 and millions of dollars and had, I don't know, 50,
14 75 or so people working on it for a long time. We
15 were committed. The company was committed to
16 installing this technology.

17 It didn't make me feel particularly
18 good to say that we don't know how to make this
19 thing work.

20 But I didn't know how. We didn't
21 have reliable reaction rates. I didn't have the
22 size of the vessels, the pumps, the tanks. There
23 just wasn't sufficient data there to design a
24 reliable or to design any commercial process.

25 Q I want you to assume, Mr. Burnley, that

1 there's been testimony that the real reason that
2 this project, NOD, was not installed is because it
3 was going to cost \$100 million dollars; is that
4 correct?

5 A That's not correct, because we even had
6 money appropriated in what we call the 650 document,
7 the funding document for the plan. The company
8 spent a lot of money, and the company intended to
9 install this technology if it had worked.

10 In fact, even after we had to make
11 the decision because of timing to go with
12 crystallization, the R & D folks continued to try to
13 work with it.

14 Q And did you have occasion to work with Dr.
15 Farone and Dr. Uydess, whose testimony has been read
16 in this case, with respect to the NOD project?

17 A Yes, I did.

18 Q And did either of those gentlemen have the
19 responsibility to make the engineering decision
20 about whether the product or this project could
21 actually commercialize?

22 A Well, no, they didn't have -- I guess, no,
23 they didn't.

24 Q And did Dr. Farone ever tell you, in your
25 working relationship with him, that he believed that

1 the project was not commercialized because it cost
2 too much?

3 MR. WOBBROCK: Objection. Hearsay.

4 THE COURT: All right. I'll sustain the
5 objection.

6 Proceed on, counsel.

7 BY MR. PHILLIPS:

8 Q Did you ever hear -- I'll strike that.

9 That's fine.

10 MR. PHILLIPS: I would like -- I am going
11 to go into another area, but I'm taking my cue
12 from you, Your Honor.

13 THE COURT: All right. We'll go a little
14 farther.

15 Go ahead.

16 MR. PHILLIPS: All right.

17 BY MR. PHILLIPS:

18 Q I would like to turn to the SCoR program.
19 This is the program that you mentioned at the
20 beginning of your testimony. Is that a program that
21 you are the executive sponsor for; is that right?

22 A Yes, that's correct.

23 Q And, again, could you just again tell us
24 what SCoR stands for?

25 A Yes. It is just an internal acronym that

1 means smoke constituent reduction.

2 Q Smoke constituent reduction?

3 A Yes.

4 Q Now, why don't you take a moment. Again,
5 Dr. Whidby testified yesterday about unconventional
6 cigarettes like the Accord cigarette. Is the SCoR
7 program a conventional cigarette program?

8 A Yes. Yeah, it is just a normal lit-end
9 cigarette, as opposed to the electrically-lit
10 cigarette, as I guess Dr. Whidby described
11 yesterday.

12 Q Why don't you tell us a little bit about
13 this program that you are the executive sponsor for?

14 A Okay. I guess I would say that it is the
15 culmination of a lot of experience and a lot of
16 years of research at Philip Morris.

17 We have been working on ways to
18 reduce the amounts of substances in tobacco smoke,
19 which you probably heard about, that we and others
20 believe are hazardous.

21 About a year ago, our executive
22 management, our CEO, Mike Szymanczyk created what he
23 called a mission imperative. And he said that
24 marketing, designing and marketing a reduced-risk
25 conventional cigarette is the most important project

1 initiative we have on our plate.

2 And I was asked to pull a team of
3 people together to commercialize this product as
4 soon as possible. And we were given some very
5 aggressive time lines.

6 So, what this is all about then is
7 assembling a team of R & D product designers to
8 actually, actually do the conceptual design of the
9 product.

10 To pull together a team of engineers
11 to develop the machinery necessary to make this
12 product, because it can't be made on our existing
13 machinery. It is a different product.

14 To design the physical
15 infrastructure, the buildings to procure the
16 equipment to purchase the machinery.

17 To work with our scientific affairs
18 people to make sure that we assess the product
19 correctly and evaluate it correctly so that what we
20 market is a serious product and one that's got a
21 chance of reducing the risk associated with smoking.

22 It involves working with marketing to
23 discuss, you know, how we will be able to
24 communicate about this product with the consumer.

25 So, I guess I could say it's a

1 culmination of a lot of work, and my job is to pull
2 it all together and make it happen.

3 THE COURT: Counsel, why don't we stop
4 right here.

5 MR. PHILLIPS: Very well, Your Honor.

6 THE COURT: All right.

7 Members of the jury, your regular morning
8 break. Thank you.

9 All right. Court is out of session.

10 The witness may step down.

11 * * *

12 (Whereupon, Vol. 36-A adjourned, and
13 Vol. 36-B was reported by Katie Bradford.)

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1 STATE OF OREGON)
) SS.
2 County of Multnomah)

3
4 I, Jennifer Wiles, hereby certify that I
5 am an Official Court Reporter to the Circuit
6 Court of the State of Oregon for Multnomah
7 County; that I reported in Stenotype the
8 foregoing proceedings and subsequently
9 transcribed my said shorthand notes into the
10 typewritten transcript, pages 1 through 74,
11 both inclusive; that the said transcript
12 constitutes a full, true and accurate record of
13 the proceedings, as requested, to the best of
14 my knowledge, ability and belief.

15 Dated this 22nd day of August, 2002 at
16 Portland, Oregon.

17
18
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20 _____
 Jennifer Wiles
 Official Court Reporter

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